REMARKS:

1) Entry and consideration of the present Response after Final are respectfully requested. This Response does not increase the number of claims or raise any new issues that would require further consideration beyond the issues of the Final Office Action. Also, this Response is applicants' first opportunity to reply to the new grounds of rejection based on a new reference asserted for the first time in the Final Office Action. Therefore, the present amendments and arguments could not have been submitted previously, and consideration thereof after Final is proper.

2) Only claims 26 and 40 are being amended, to clarify certain distinguishing features of the invention. The amendment of claim 26 is supported by the original specification at page 21, lines 3 to 24, and the amendment of claim 40 is supported by the original specification at page 21, lines 11 to 24. Thus, these amendments do not introduce any new matter. Entry and consideration of the amendments is respectfully requested.

3) Referring to section 3 on page 2 of the Office Action, the allowance of claims 1 to 25, 27 to 39 and 41 is appreciated. Those claims have been maintained without further amendment, and should still stand allowed.

4) Referring to section 2 on page 2 of the Office Action, the rejection of claims 26 and 40 as anticipated by US Patent 3,785,210 (Mueller) is respectfully traversed.

5) Mueller discloses a method for detecting pivotal vibration and translational vibration using an apparatus including two force measuring devices.

Particularly, as pointed out by the Examiner, the apparatus according to Mueller includes a first force measuring element (2) located directly on a first balancing plane (a) for measuring translational vibrations, as well as a second force measuring element (11) located offset from the first measuring plane (a) along the rotation axis of a shaft (4) for measuring pivotal vibrations of the shaft caused by an unbalance on a second balancing plane (b) of the object (such as a wheel) to be balanced. The balancing method according to Mueller requires two separate measuring runs. See the Mueller Abstract; col. 3, lines 1 to 20; col 4, lines 4 to 57; and col. 6, line 65 to col. 7, line 8.

In a first measuring run, only the second (pivoting force) measuring element (11) is switched active, while the first (translational force) measuring element (2) is switched inactive or disconnected. Thereby, the unbalance on the second balancing plane (b) causing the pivoting vibration of the shaft (4) is detected by the second measuring element (11), and can thus be measured and then corrected.

Thereafter, in a second measuring run, both the pivoting vibration measuring element (11) and the translational vibration

measuring element (2) are connected in parallel, so that both of these measuring elements are simultaneously switched active to provide measuring results. In this second measuring run, the two measuring elements (2, 11) cooperate to measure the static unbalance of the wheel, which corresponds to the translational unbalance in the first balancing plane (a).

Mueller further discusses the general prior art of balancing methods using two balancing runs (col. 1, lines 17 to 21) and compares such methods to other prior art methods using only a single balancing run (col. 2, lines 9 to 23). Mueller expressly distinguishes the disclosed two-run method from the prior single run methods (col. 3, lines 5 to 20).

It is evident from a consideration of the above mentioned two measuring runs, that the **first measuring run** uses **only** the "pivotal" force measuring element (11) for determining the pivotal vibration and thus the unbalance on the second plane (b). On the other hand, the **second measuring run** uses **both** measuring elements (2 and 11) for determining the translational unbalance and thus the static unbalance on the first measuring plane (a).

It is further evident that the "translational" measuring element (2) is sensitive to only the translational vibrations, but that the **other measuring element (11)** is not isolated from the translational vibrations, but rather is sensitive to **both** pivoting and translational unbalances. This can be seen because both measuring elements (2 and 11) are used together in the second measuring run. This, of course, only makes sense if the measuring element (11) also contributes measuring information (i.e. is also sensitive) with respect to the static unbalance

being measured in the second measuring run. This can further be understood from the mechanical arrangement shown and described in connection with the single drawing figure of the reference, from which it is apparent that there is no structure that would isolate translational vibrations from the measuring element (11).

These features of the method and apparatus disclosed by Mueller are significant because they represent substantial differences in comparison to the present invention.

6) Step d) of present claim 26 requires a combination of two special features, which is neither disclosed nor suggested by the reference.

As a first feature, step d) requires **separately detecting** the pivotal vibration or the translational vibration separately from the respective other vibration.

As a second feature, step d) requires that this separate detection is carried out using **only** a first sensor that is **sensitive to only** the type of vibration being detected without being sensitive to the respective other type of vibration.

7) Even if it is conceded that the first measuring run disclosed by Mueller satisfies the first feature, it does **not** satisfy the second feature of present claim step d). Namely, the first measuring run according to Mueller could be said to separately detect the pivotal vibration separately from the translational vibration, but this is **not** carried out using a sensor that is sensitive to **only** the pivotal vibration without being sensitive to the translational vibration. Instead, as pointed out above,

the measuring element (11) used during the first measuring run is actually sensitive to <u>both</u> pivotal and translational vibrations or unbalances.

8) On the other hand, if one tries to analogize the second measuring run disclosed by Mueller to the present inventive method, such an analogy would also fail. Namely, in the second measuring run of Mueller, one might take the translational vibration being measured as the inventive "first vibration" separately from the "second vibration" (i.e. the pivotal vibration), using the measuring element (2) that is sensitive to only the translational vibration. However, the second measuring run according to Mueller does **<u>not</u>** use **<u>only</u>** this sensor (2), but rather uses **<u>both</u>** sensors (2 and 11) connected simultaneously in parallel.

9) In view of the above, neither the first measuring run nor the second measuring run according to Mueller discloses or suggests the combination of features recited in present claim 26, step d). Moreover, Mueller would not have suggested any reason, purpose or motivation for modifying the method in a manner according to the present invention. Thus, claim 26 is not anticipated and would not have been obvious.

10) Present claim 40 depends from claim 26 and recites a further step carried out <u>simultaneously during the step d)</u> which has been discussed above.

According to claim 40, the method further comprises separately detecting the second vibration separately from the first vibration using **only** a second sensor that is sensitive to **only** the second vibration without being sensitive to the first vibration. Thus, the inventive method involves separately detecting each one of the two vibrations individually, respectively using only an individual sensor that is sensitive to only the respective particular vibration, and both of these separate detections are carried out simultaneously during the same measuring run or step.

The method disclosed by Mueller is significantly different from the method of present claim 40 on all counts. As discussed above, Mueller requires two measuring runs and does not provide for the simultaneous, yet separate and independent detection of pivoting vibrations and translational vibrations respectively using two sensors that are each sensitive to only a respective individual vibration.

Thus, the invention of claim 40 is not anticipated and would not have been obvious.

11) For the above reasons, the Examiner is respectfully requested to withdraw the rejection of claims 26 and 40 as anticipated by Mueller.

12) Favorable reconsideration and allowance of the application, including all present claims 1 to 41, are respectfully requested.

Respectfully submitted,

Dieter THELEN et al.
Applicant

WFF:ar/3896

By
Walter F. Fasse
Patent Attorney
Reg. No.: 36132
Tel. 207-862-4671
Fax. 207-862-4681
P. O. Box 726
Hampden, ME 04444-0726

CERTIFICATE OF FAX TRANSMISSION:

I hereby certify that this correspondence with all indicated enclosures is being transmitted by telefax to (703) 872-9306 on the date indicated below, and is addressed to: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450.

12/22/03

Name: Walter F. Fasse - Date: December 22, 2003